

Remarks

Summary

Claims 1-19 were pending. Claims 6, 11-12, 17, and 19 have been rewritten and Claims 1-5 and 15-16 cancelled. No new matter has been added as a result of this amendment. Claims 6-14 and 17-19 are pending after entry of this amendment.

Rejection of Claims

In the Office Action, Claims 1-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Miyazaki (U.S. Patent 5,978,061). Applicants have rewritten Claim 6 and traverse the rejection of pending Claims 6-14 and 17-19.

Claim 1 recites a reflective liquid crystal display that contains the color filter substrate and a second substrate, neither of which has a light-shielding layer. The color filter substrate has a visible area that contains an effective display area and a margin area which is outside the effective display area. The color filter layer, the transparent electrode, and the alignment layer of the color filter substrate are formed in a region which includes the effective display and margin areas. The color filter layer has a portion outside the effective display area that has the color layers stacked thereon. This portion does not contact the second substrate. Such an arrangement permits a reduction in the amount of light in the margin area reflected at the reflective layer and thereby improves the visibility of a reflective liquid crystal display in the effective display area. The margin area appears close to black without the use of an additional layer such as a light-shielding layer (black mask), thereby increasing manufacturing efficiency and brightness.

Applicants submit that no *prima facie* case of obviousness exists.

To establish a *prima facie* case of obviousness, 1) there must be some suggestion or motivation to modify the teachings of the references, 2) there must be some expectation of success, and 3) the references must teach all of the claimed limitations.

1) No suggestion or motivation exists to combine the references. Miyazaki is directed towards transmissive LCDs while AAPA is directed towards reflective LCDs. It is undeniable that reflective LCDs and transmissive LCDs have entirely different structures and are used for entirely different purposes (a reflective LCD is used when the ambient light is sufficient to provide adequate display and a transmissive LCD is used when the ambient light is insufficient and a backlight is used). Such structures require extensive modifications, at a minimum, even if they are able to be combined. The only response so far has been that the modifications do not depend on the type of LCD, which does not in and of itself provide motivation for combining these structures; as stated in the MPEP, the mere fact that references can be combined is not sufficient to establish a *prima facie* case of obviousness (See MPEP 2142). This is especially true where Applicants have repeatedly noted that such arrangements are difficult, if not impossible, to combine.

The Examiner points to the paragraphs bridging col. 11 and 12 as providing motivation to produce a stack of color layers in the structure of AAPA. However, AAPA illustrates a conventional reflective LCD arrangement in which the structure of the color filter layer outside the effective display area simply does not exist. As described by Miyazaki, a stack of color layers outside the effective display area replaces a transfer in the transmissive LCD for applying a voltage between the substrates. However, neither the use of a transfer, nor specifically a transfer used in a transmissive LCD is discussed by or described in AAPA. Miyazaki simply does not provide any motivation or suggestion for modifying the structure in AAPA to incorporate the missing elements of the AAPA structure. Nor does AAPA, except through the problems described in the instant application and therefore the use of impermissible hindsight, motivate a change of the structure of a reflective LCD.

2) Even if some motivation existed to combine AAPA and Miyazaki, only some of the elements in Claim 6 are present. Specifically, none of the cited references anticipate or suggest an arrangement in which the portion of the color filter layer outside the effective display area that has the color layers stacked thereon must contact the second substrate. Miyazaki particularly teaches away from the arrangement of the pending claims as the purposes of the stack of the color layers include maintaining the distance between the substrates and effecting electrical contact between the layers.

Moreover, both AAPA as well as Miyazaki, in every single embodiment, teach a light shielding layer on the color filter substrate to block light from being transmitted through the liquid crystal layer in particular areas. This is entirely opposite the arrangements recited in the pending claims. The Examiner states that because the improvement is not about light shielding, it is obvious to remove the light shielding layer. Applicants submit that this simply is not true, nor has any motivation been provided to eliminate such layers. Further, since the stacked color layers of Miyazaki are not designed to shield light, Miyazaki explicitly teaches the use of the light shielding layer formed around the periphery of the liquid crystal panel. Miyazaki additionally teaches that the liquid crystal layer does not exist in the region where the color layers are stacked and thus this area cannot serve as the visible area, completely opposite to the arrangement recited in Claim 6.

For at least these reasons, none of the cited references, alone or in combination, cited by the Examiner anticipate or suggest the arrangement of Claim 6. Thus, the pending claims are patentable over the cited references.

For similar reasons, dependent Claim 12 and 17-19, for example, which recite particular placements of the color filter layer are independently patentable over the cited references.

Conclusion

Applicants respectfully submit that all of the pending claims are in condition for allowance. If for any reason the Examiner is unable to allow the application in the next Office Action and believes that a telephone interview would be helpful to resolve any remaining issues, he is respectfully requested to contact the undersigned.

Respectfully submitted,



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